REASONABLE RAILWAY RATES.

So many and various are the phases from time to time developed by the multitude of individual contributions to current discussion of what is known as the "Railroad Problem" that there is grave danger of forgetting, at least temporarily, that the only adequate cause for the prevailing widespread dissatisfaction with the methods adopted by those officially in charge of railway properties, and the relations between railway corporations and their patrons, is public discontent resulting from the charges exacted for railway transportation. Much is heard, from those interested as owners or managers of railway properties, in denunciation of what are termed legislative attacks upon those properties, and many harsh names, such as "confiscatory legislation," are, perhaps not always without justification, applied to what are in reality honest, although often mistaken, attempts to secure to the public by legislative action more satisfactory rates. While it is undoubtedly true that many attempts at statutory regulation of railways have been unwise, and therefore productive of evil rather than good, it must be admitted that the popular inspiration of such measures has been consequent upon dissatisfaction with railway charges, and could have arisen from no other cause, because in no other respect do the railways affect so large a portion of the people. Upon the other hand, an important section of the press and many popular leaders are constant and vehement in their attacks upon the so-called evils of over-capitalization, stock-watering, unnecessary construction, improvident and wasteful management, consolidations, agreements to maintain rates or divide traffic, etc., which, even if serious evils in themselves, can only operate injuriously upon a limited number of individuals, unless their effects extend to the charges for transportation.

There can be no doubt that were the public entirely satisfied with the rates charged for the transportation of persons and property by rail, little general interest would be taken in matters of mere railway economy, and their discussion would be relegated to meetings of boards of directors, railway associations, and those technical journals which are devoted to transportation.

It is axiomatic that an accurate diagnosis of the disease to be cured is an essential preliminary to the application of a proper remedy, and whoever would prescribe adequately for the railway malady will do well to bear constantly in mind that, no matter how complicated the symptoms occasionally disclosed, the restoration of public content with railway methods can be accomplished only through measures which affect directly the rates and charges for transportation.

Popular dissatisfaction with railway charges does not arise from the fact that they are universally or even generally excessive. Railway rates in the United States are generally lower than anywhere else in the world, much lower than they were here five, ten, or fifteen years ago, and quite as low as is consistent with the maintenance in an efficient condition of road-bed and equipment, the payment of fair wages, and any even approximately adequate return to the capital invested.

During the six years covered by the reports of the Bureau of Statistics, of the Interstate Commerce Commission, the average rate per ton per mile charged for the transportation of freight declined from 1.001 cents to .878 cent, and that per passenger per mile from 2.349 to 2.108 cents. Inconsiderable as these reductions appear when stated in this form, they represent a saving to the public, upon the traffic carried during the year ending June 30, 1893, of $115,113,377 on freight, and $34,292,134 on passenger transportation, a total of $149,405,511 in one year, an amount exceeding by nearly fifty millions the total of all dividends paid on railway stock, and equal to seventy-three per cent of the entire

customs revenue of the United States Government during that year. It should be remembered that these reductions were effected within a comparatively short period, and one during which sixty per cent of all railway stock capital received no dividends.

An exhaustive study of changes in railway freight rates since 1852 was recently made under the direction of the Committee on Finance of the United States Senate, the results of which, published as a Senate document,* constitute an exceedingly important contribution to the available information regarding railways. The importance of this investigation, the only one of the kind ever undertaken, led to its being placed in charge of Mr. C. C. McCain, now auditor of the Interstate Commerce Commission, a gentleman of wide experience and thorough knowledge of railway affairs, whose name is sufficient testimony to its accuracy. Mr. McCain briefly summarizes the results of this investigation as follows:

> "From all the forms of comparison presented it is clearly demonstrated that there has been a constant downward tendency in freight charges in all sections of the country."

Data contained in this report fairly illustrate the reductions that have taken place during the period investigated. The references in this paper cover an exceedingly small fraction of the matter included and the report itself should be carefully studied by any one desiring to be fully informed concerning the history of railway freight charges in the United States.

In many respects the most satisfactory presentation of the downward tendency in railway freight charges is afforded by a comparison of average rates per ton per mile charged during successive periods. Aside from the manifest advantage of clearness this method may be preferred, because it excludes no portion of the aggregate traffic and presents the

* "Wholesale Prices and Wages." Report of Finance Committee, United States Senate. Report No. 1394. Second session Fifty-second Congress, Part I, pp. 401-658.

actual net result of all changes whether advances or reductions. A disadvantage, perhaps not quite so apparent, arises from the fact that with the growth of interstate and foreign commerce and the rapid development of our railway system there has been an immense increase of long-distance traffic, which, naturally carried at lower rates per ton per mile than shorter-distance traffic, effects a reduction in the average, although rates may not be absolutely lower for similar service. The error thus caused, cannot, however, be of much importance. That such a comparison will show lower charges at the present than at any former time is generally admitted, but the extent of the reductions may not be so widely understood. The following instances are selected from Mr. McCain's report.* The average rate charged by the Pennsylvania Railroad for transporting one ton of freight one mile during 1852 was 5.42 cents; in 1862 it was 2.04 cents; in 1872, 1.46 cents; in 1882, .87 cent; in 1892 only .65 cent. In other words during 1892 sixty-five cents would pay for as much transportation of freight over the Pennsylvania Railroad as $5.42 would thirty years earlier. Similar reductions have occurred on all other lines. In New England, the average charge of the New York, New Haven & Hartford Railroad has declined from 6.23 cents in 1870 to 1.76 cents in 1892. From Buffalo to Chicago one of the principal routes is that via the Lake Shore & Michigan Southern Railway. The average charge of this company during 1854 was 3.51 cents; during 1864, 2.83 cents; during 1874, 1.18 cents; during 1884, .65 cent, and during 1892, .60 cent. The Chicago, Milwaukee & Saint Paul Railway operates a greater mileage than any other company in the same territory. It received an average of 1.06 cents for each ton carried one mile during 1892, being a reduction from 1.28 cents in 1882, 2.49 cents in 1872 and 2.68 cents in 1863. Beginning with an average of 6.14 cents during 1872 that of the Denver & Rio Grande Railroad had declined to 1.86

* Pp. 615–617.

cents in 1892, while during the same period the Union Pacific Railway had reduced its charges from an average of 2.34 cents to 1.08 cents. When it is added that an increase of one mill per ton per mile in the average charges for the traffic carried during one year would produce additional revenue equal to ninety per cent of all dividends now paid, the importance of these reductions will be appreciated.

No single rate is of greater constant importance than that upon grain via the all-rail lines from Chicago to New York. It is not merely the rate at which grain is carried between the greatest grain market in the world and the principal grain exporting port, but is also the basis of rates from all western points to all of the cities and towns located on or adjacent to the Atlantic seaboard. Any change in this rate, therefore, effects a corresponding change in the rate upon nearly every bushel of grain produced in the United States and not consumed at or near the point of production.

The following statement shows the rate charged for the transportation of grain via all-rail lines from Chicago to New York on the dates named:

RATES IN CENTS PER 100 POUNDS.

YEAR.	JANUARY 15.	APRIL 15.	JULY 15.	OCTOBER 15.
1864	.	75	80	95
1869	75	50	50	50
1874	60	40	45	45
1879	35	20	22	35
1884	30	15	20	25
1889	25	25	20	25*
1894	25	20	20	

The rates charged for the transportation of both anthracite and bituminous coal have been greatly reduced during the last twenty years. For example, while the average rate per ton of 2000 pounds from collieries in the Clearfield region of Pennsylvania to Jersey City was $4.05 during 1873, a ton of 2240 pounds was transported between the same points in 1892 at an average rate of $2.25. Cotton compressed in

* Corn, 20 cents.

bales was carried from Memphis to New York during 1893 at a constant rate of 50½ cents per 100 pounds, which was a reduction from 74 cents which prevailed during 1881.

Local rates have declined even more than has, in many instances, been the case with competitive rates.* For example, common starch as late as 1874 was charged 38 cents per 100 pounds from Boston to North Adams, Mass., via the Boston & Albany Railroad. The same transportation is now performed for 15 cents.

Examples of reductions equal in extent to the foregoing, including all sections of the country and every article of commercial importance commonly offered for shipment by rail, might be multiplied almost indefinitely, but sufficient have been adduced to illustrate the constant tendency toward lower charges, which has been such a prominent characteristic of the development of railway transportation in the United States.

Having established the existence of this tendency, the question naturally arises whether it is the result of concessions grudgingly yielded by reluctant carriers who have succeeded in retaining rates sufficiently high to yield extortionate and unreasonable returns upon the capital invested, or has it so fully kept pace with the institution of more provident methods of administration and the economies permitted by increased density of traffic that the larger proportion, if not the entire aggregate of the benefits derived therefrom, has accrued to the shipping and traveling public instead of to the owners of railway stocks and bonds.

It may be confidently asserted that except in extremely rare instances it is practically impossible to maintain, for any considerable period, railway rates which are excessive. The interests of the railways and their patrons unite in the creation of conditions against which it is vain for any railway official to contend for extremely high rates. From the standpoint of the railways, it is evident that excessive rates

*See Fourth Annual Report of Interstate Commerce Commission, pp. 225–229.

constitute a limitation upon the quantity of traffic, which, if carried far enough, may became prohibitive. The expenses of railway transportation are roughly divided into those arising from operation and fixed charges in the proportion of about sixty-nine per cent and thirty-one per cent respectively. The latter are entirely independent of the volume of traffic, while a large portion of the former are so far unaffected thereby that a considerable increase in traffic would result in a relatively much smaller increase in the expense of operation. It, therefore, necessarily follows that a large traffic at low rates is often more profitable than a smaller traffic at higher rates, a fact which few railway managers have failed to appreciate. Aside from the mere present increase in net revenue possible on account of reductions from high to more equitable rates, it is incontestable that low rates tend to develop the territory contiguous to the line over which they are available, and consequently to promote the final and permanent prosperity of such lines. An enlightened consciousness of these facts has caused the great majority of railway officials having authority to make rates to concede to their patrons the lowest which could be made without increasing operating expenses faster than gross revenue.

Shippers are constantly appealing for lower rates, and the pressure thus brought has been too great for continued successful resistance. The manufacturer or producer sees in a concession of a few cents, or even a fraction of a cent, from current rates an opportunity to put the commodity he ships into more distant markets or to successfully underbid his competitors in those already reached. Commercial conditions and the importunity of rival shippers as well as the provisions of the Interstate Commerce Law, which in this respect is believed to be merely declaratory of the common law, require that if any concession is made it shall be open to all shippers of the same or similar commodities between the same localities in the same direction. Further than this,

the Interstate Commerce Law requires that the carrier making such a concession shall so adjust all its rates that not only intermediate rates upon similar traffic shall not be in excess of those between more distant points, but that the entire body of rates shall be relatively reasonable and just. Thus along the line of one carrier an initial concession to a single shipper requires a multitude of similar concessions to other shippers and at other points. This, however, is not all. Shippers located on other lines, and often at an equal or greater distance in other directions from the common market, find themselves at a disadvantage on account of the reductions already granted, and appeals are at once made for reductions by other lines sufficient to restore the original status. These must be made, or the inevitable penalties of loss of traffic and depleted revenue fall upon the obstinate carrier. Railways are also forced in a large measure to compete for traffic with carriers upon water routes, the Great Lakes, navigable rivers, and canals, as well as among themselves, the combat in the latter case often assuming Titanic proportions, particularly when one or more of the competing railways is by its own bankruptcy relieved from the necessity of earning interest upon its funded debt. Thus the action and interaction of forces, as far beyond legislative restraint as they are beyond the control of a single carrier, unceasingly operate to reduce the charges for railway transportation while the greater economy in operation and management enforced and made possible by lower rates and increased traffic in turn permits further reductions.

Viewed from the standpoint of the investor in railway properties, who may be supposed for the time being merely selfishly interested to secure the largest possible net return upon his capital, it can scarcely be said that the present body of railway rates, considered as a whole, is satisfactory, nor has there ever been a period, except perhaps during the unrestrained competition incident to a war of rates, when it was less so. The interest of the investor in railway

properties in the rates charged is twofold; first, that they shall produce sufficient revenue above necessary operating expenses to yield an adequate return upon the capital represented by the securities he holds, and, second, that they shall permit and encourage the development of the territory contiguous to the railway in order that the future value of its property and franchises may be assured. In order to accomplish the latter result it is obviously necessary that rates should be neither unreasonably high nor unjustly discriminating between persons, localities or classes of traffic.

The following statement, arranged from data contained in the report of the Statistician of the Interstate Commerce Commission, shows an income account for all the railways in the United States, covering the year ending June 30, 1893, and also the same data for each group* according to the system of territorial distribution of statistics adopted by the Commission.

* The division of the country into groups for the purpose of localizing railway statistics may be roughly defined as follows:

Group I. This group embraces the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

Group II. This group embraces the State of New York, Pennsylvania, New Jersey, Delaware and Maryland, exclusive of that portion of New York and Pennsylvania lying west of a line drawn from Buffalo to Pittsburgh via Salamanca, and inclusive of that portion of West Virginia lying north of a line drawn from Parkersburg east to the boundary of Maryland.

Group III. This group embraces the States of Ohio, Indiana, and the southern peninsula of Michigan; also that portion of the States of New York and Pennsylvania lying west of a line drawn from Buffalo to Pittsburgh via Salamanca.

Group IV. This group embraces the States of Virginia, North Carolina, South Carolina, and that portion of the State of West Virginia lying south of a line drawn east from Parkersburg to the boundary of Maryland.

Group V. This group embraces the States of Kentucky, Tennessee, Mississippi, Alabama, Georgia, Florida, and that portion of Louisiana east of the Mississippi River.

Group VI. This group embraces the States of Illinois, Wisconsin, Iowa, Minnesota, the northern peninsula of the State of Michigan, and that portion of the States of North Dakota and South Dakota and Missouri lying east of the Missouri River.

Group VII. This group embraces the States of Montana, Wyoming, Nebraska, that portion of North Dakota and South Dakota lying west of the Missouri River, and that portion of the State of Colorado lying north of a line drawn east and west through Denver.

Group VIII. This group embraces the States of Kansas, Arkansas, that portion of the State of Missouri lying south of the Missouri River, that portion of the

INCOME ACCOUNT—YEAR

ITEMS.	Amount for United States.	AMOUNT FOR EACH GROUP.		
		Group I.	Group II.	Group III.
Income:				
From passenger service,				
Passenger revenue	$301,491,816	$37,448,008	$75,272,215	$46,009,778
Mail revenue	28,445,053	1,322,471	4,397,458	5,227,043
Express revenue	23,631,394	2,186,423	6,454,821	3,712,666
Other revenue	6,455,778	796,853	1,066,905	727,180
Total	$360,024,041	$41,753,755	$87,191,399	$55,676,667
From Freight service:				
Freight revenue	829,053,861	43,298,341	218,226,711	127,572,498
Other revenue	3,848,344	943,540	1,022,982	731,945
Total	$832,902,205	$44,241,881	$219 249,693	$128,304,443
Other earnings from operation	27,732,053	899,842	6,528,628	3,391,359
Unclassified	93,575	. . . . . .	. . . . . .	. . . . . .
Total from operation	$1,220,751,874	$86,895,478	$312,969,720	$187,372,469
Other sources	149,649,615	8,257,763	52,599,120	18,628,164
Total income	$1,370,401,489	$95,153,241	$365,568,840	$206,000,633
Expenditures:				
Operating expenses	$827,921,299	$60,801,378	$206,137,395	$134,607,313
Fixed charges:				
Interest on funded debt *	250,176,887	8,001,716	57,049,362	30,030,059
Interest on current liabilities	7,989,508	728,312	2,059,586	703,035
Rents	107,222,921	7,356,324	40,112,619	15,618,415
Taxes	36,514,689	3,651,450	8,176,864	5,126,092
Miscellaneous	29,518,151	246,663	6,957,346	2,850,703
Total	$431,422,156	$19,984,465	$114,355,777	$54,328,304
Dividends:				
On common stock	83,661,738	11,972,292	35,397,714	10,637,207
On preferred stock	17,268,147	1,394,018	1,135,191	5,102,072
Total	$100,929,885	$13,366,310	$36,532,905	$15,739,279
Other payments from net income	2,011,404	105,426	111,056	693,938
Total expenditures	1,362,284,744	94,257,579	357,137,133	205,368,834
Surplus	8,116,745	895,662	8,431,707	631,799
Deficit	. . . . . .	. . . . . .	. . . . . .	. . . . . .
Total	$1,370,401,489	$95,153,241	$365,568,840	$206,000,633

State of Colorado lying south of a line drawn east and west through Denver, and the Territories of Oklahoma, Indian Territory, and the portion of New Mexico lying northeast of Santa Fé.

Group IX. This group embraces the State of Louisiana, exclusive of the portion lying east of the Mississippi River, the State of Texas, exclusive of that portion lying west of Oklahoma, and the portion of New Mexico lying southeast of Santa Fé.

Group X. This group embraces the States of California, Nevada, Oregon, Idaho, Washington, and the Territories of Utah, Arizona, and that portion of the Territory of New Mexico lying southwest of Santa Fé.

*Accrued.

ENDING JUNE 30, 1893.

Amount for Each Group.						
Group IV.	Group V.	Group VI.	Group VII.	Group VIII	Group IX.	Group X.
$10,613,721	$18,588,706	$55,484,516	$9,621,552	$20,763,162	$8,366,946	$19,323,212
1,530,176	2,449,301	6,046,633	1,852,276	2,803,612	974,493	1,841,590
742,632	1,545,866	3,914,292	840,818	2,383,041	767,528	1,083,307
92,960	278,382	1,868,940	270,212	379,514	164,870	809,962
$12,979,489	$22,862,255	$67,314,381	$12,584,858	$26,329,329	$10,273,837	$23,058,071
29,604,481	56,149,703	171,306,741	33,910,385	76,719,992	31,035,402	41,229,607
105,896	67,607	660,576	4,601	67,846	128,791	114,560
$29,710,377	$56,217,310	$171,967,317	$33,914,986	$76,787,838	$31,164,193	$41,344,167
1,131,500	2,457,513	6,618,551	897,629	3,891,976	557,619	1,357,436
21,974	7,570	64,031	. . . . . .	. . . . . .	. . . . . .	. . . . .
$43,843,340	$81,544,648	$245,964,280	$47,397,473	$107,009,143	$41,995,649	$65,759,674
3,770,125	8,606,602	20,698,852	5,407,990	6,928,402	5,100,658	19,651,939
$47,613,465	$90,151,250	$266,663,132	$52,805,463	$113,937,545	$47,096,307	$85,411,613
$30,425,792	$58,321,252	$159,106,507	$30,609,057	$73,395,124	$31,786,526	$42,730,955
11,518,435	21,002,677	49,871,967	14,084,801	27,902,351	11,389,970	19,325,549
870,206	750,230	641,127	150,114	745,948	277,069	1,063,881
3,280,851	5,838,902	11,547,721	1,758,889	2,133,541	3,555,805	16,019,854
1,159,988	2,418,835	8,213,716	1,144,467	3,642,644	1,009,678	1,970,955
937,211	1,167,706	4,261,033	4,607,087	2,245,152	682,895	5,562,355
$17,766,691	$31,178,350	$74,535,564	$21,745,358	$36,669,636	$16,915,417	$43,942,594
1,245,786	4,285,314	13,153,738	2,770,819	1,206,585	5,899	2,986,384
485,242	96,107	7,676,932	147,273	918,896	. . . . . .	312,416
$1,731,028	$4,381,421	$20,830,670	$2,918,092	$2,125,481	$5,899	$3,298,800
139,459	. . . . . .	445,617	. . . . . .	. . . . . .	. . . . . .	515,908
50,062,970	93,881,023	254,918,358	55,272,507	112,190,241	48,707,842	90,488,257
. . . . . .	. . . . . .	11,744,774	. . . . . .	1,747,304	. . . . . .	. . . . .
2,449,505	3,729,773	. . . . . .	2,467,044	. . . . . .	1,611,535	5,076,644
$47,613,465	$90,151,250	$266,663,132	$52,805,463	$113,937,545	$47,096,307	$85,411,613

The foregoing statement casts a vivid light upon the revenue-producing power of the present body of railway rates as well as upon the familiar charge that railway earnings are grossly excessive and extortionate. It shows that sixty per cent of the aggregate revenue is required to pay the cost of operation, which includes wages of employes, repairs of road-bed and equipment, etc.; three per cent is

paid to the various State and municipal governments for taxes, eight per cent for rents, two per cent for miscellaneous purposes, which includes expenses of associations, etc., making a total of seventy-three per cent of the aggregate revenue that is absolutely required for expenses which must precede the right of the bondholder to require payment of interest or of the stockholder to demand dividends. The remaining twenty-seven per cent is distributed among those who furnish capital, or retained by the corporation in the form of permanent improvements, or surplus to provide against future contingencies. The proportions devoted to each of these purposes is shown below for the year ending June 30, 1893:

PAYMENTS TO OR FOR THE BENEFIT OF RAILWAY CAPITAL.

ITEMS.	Amount.	Per cent of gross revenue.	Per cent of total return to capital.
Interest on funded debt	$250,176,887	18.26	67.76
Interest on current liabilities . .	7,989,508	0.58	2.16
Dividends on common stock . .	83,661,738	6.10	22.66
Dividends on preferred stock . .	17,268,147	1.26	4.68
Other payments from net income,	2,011,404	0.15	0.54
Surplus	8,116,745	0.59	2.20
Total	$369,224,429	26.94	100.00

Probably the wildest advocate of anti-railroad legislation would not describe as unnecessary any of the expenditures shown except those included in the slightly more than one-quarter of the aggregate which accrues in one form or another to the benefit of invested capital, and it is therefore only necessary to assert, what will not be denied, that the items which constitute the first seventy-three per cent of the total are legitimate and unavoidable expenses that must be provided for out of the revenues produced by the charges exacted for transportation. Neither will it be seriously contended that the capital invested in railways is entitled to no

return, but all will agree that the schedules of rates should be so arranged as to provide not only for revenue to meet necessary expenses of operation, but also a fair return upon the just value of the property. Let us now examine the amounts expended for dividends and interest in order to discover, if possible, whether the investor now receives an inordinate return upon his capital.

The table on pages 32 and 33 shows the amount of railway capital of each class in the United States, and in each group, on June 30, 1893, and the payments thereon during the year ending on that date:

From this table it appears that the average highest and lowest percentage of return to each of the different classes of capital were as follows:

NATURE OF CAPITAL.	AVERAGE.	HIGHEST.		LOWEST.	
	Per cent.	Per cent.	Group.	Per cent.	Group.
Stock, common, .	2.10	5.83	I	0.00	IX
Stock, preferred,	2.51	4.49	VI	——*	IX
Funded debt . .	4.79	5.67	VII	4.01	IX
Other debt . . .	1.31	2.66	IV	0.61	VII
Total	3.42	5.12	I	2.12	IX

It should also be observed that the amounts shown under the head of interest upon funded debt are considerably larger than those actually paid, for the reason that the Interstate Commerce Commission has seen fit to base its statements upon the amounts of interest accruing during each year instead of upon that actually paid, and as there was probably a default upon some portion of the interest due in each group, the actual amounts paid and the average rates must have been much lower than those shown.

The table on pages 34 and 35 shows a classification of stock and funded debt, exclusive of equipment trust obligations, based upon the rate of dividend or interest paid, during the year ending June 30, 1893.

* No dividends on preferred stock.

RAILWAY CAPITAL, DIVI-

Territory Covered.	Total Capitalization.			Classified		
				Stock.—Common.		
	Amount.	Dividends and Interest.	Rate per cent	Amount.	Dividends.	Rate per cent
Group I . .	$431,721,329	$22,096,338	5.12	$205,374,148	$11,972,292	5.83
" II . .	2,274,461,059	95,641,853	4.21	934,657,305	35,397,714	3.79
" III . .	1,429,568,568	46,472,373	3.25	465,759,333	10,637,207	2.28
" IV . .	488,640,908	14,119,669	2.89	158,133,016	1,245,786	0.79
" V . .	806,914,768	26,134,328	3.24	277,273,942	4,285,314	1.55
" VI . .	1,919,806,507	71,343,764	3.72	625,932,471	13,153,738	2.10
" VII . .	441,231,104	17,153,007	3.89	154,829,701	2,770,819	1.79
" VIII . .	1,171,110,558	30,773,780	2.63	432,070,490	1,206,585	0.28
" IX . .	549,794,975	11,672,938	2.12	226,841,437	5,899	0.00
" X . .	992,985,634	23,688,230	2.39	501,137,759	2,986,384	0.60
United States	$10,506,235,410	$359,096,280	3.42	$3,982,009,602	$83,661,738	2.10

From this table it is seen that 61.24 per cent of all railway stock and 14.39 per cent of the bonds representing funded debt paid neither dividends nor interest; that in one group 99.99 per cent of stock and 31.66 per cent of funded debt received no return; and that in the group where the business of transportation appears to have been conducted under the most favorable conditions, nearly one-quarter of the total stock was similarly portionless. Unless it can be shown that the present capitalization of the railway system of the United States is grossly excessive, these data are sufficient evidence that the return thereto is no more than is fair and reasonable, if, indeed, it is not far below what is just and proper.

While the problem of the relation between the par value of railway capitalization and the just value of railway property is one of extreme difficulty and probably does not admit of detailed solution, the difficulties surrounding it are greatly enhanced and its conditions much obscured by the frequent confusion of *just value* with the amount of actual investment or original cost. Although it is certainly true that the

DENDS AND INTEREST.

According to Nature of Capital.

Stock.—Preferred.			Funded Debt.			Other Debt.		
Amount.	Dividends.	Rate per cent	Amount.	Interest.*	Rate per cent.	Amount.	Interest	Rate per cent
$41,862,402	$1,394,018	3.33	$155,320,649	$8,001,716	5.15	$29,164,130	$728,312	2.50
72,133,182	1,135,191	1.57	1,099,367,175	57,049,362	5.19	168,303,397	2,059,586	1.22
167,233,708	5,102,072	3.05	715,829,137	30,030,059	4.20	80,746,390	703,035	0.87
52,420,485	485,242	0.93	245,323,118	11,518,435	4.70	32,764,289	870,206	2.66
52,450,295	96,107	0.18	429,349,204	21,002,677	4.89	47,841,327	750,230	1,57
170,841,190	7,676,932	4.49	1,032,005,565	49,871,967	4.83	91,027,281	641,127	0.70
13,222,581	147,273	1,11	248,551,553	14,084,801	5.67	24,627,269	150,114	0.61
74,446,857	918,896	1.23	604,411,015	27,902,351	4.62	60,182,196	745,948	1.24
7,645,832	. . .	. .	284,329,455	11,389,970	4.01	30,978,251	277,069	0.89
34,669,284	312,416	0.90	411,202,950	19,325,549	4.70	45,975,641	1,063,881	2.31
$686,925,816	$17,268,147	2.51	$5,225,689,821	250,176,887	4.79	$611,610,171	7,989,508	1.31

public has no right to demand transportation at rates too low to afford a fair return upon the just value of railway property, there is no equitable basis for the contention that the railways are entitled to interest and dividends upon the original cost of their properties, no matter how much such cost may have been enhanced by profligate expenditure or corrupt misappropriation of funds, nor how much changed conditions may have caused subsequent depreciation of the property. It may, indeed, be true that the public interest will be well served when the circumstances and conditions of railway transportation shall have become so adjusted that the security of money invested in such property is absolute, but no such condition has been, as yet, attained, and until it is those who choose to adventure their capital in the construction of railways must do so with full acceptance of the risks and hazards involved. In estimating what constitutes a fair return upon their investment, allowance should, of course, be made for the possibility of total or partial loss of the principal; that such a loss is among the possibilities is the misfortune of the investor; that it must be compensated

* Accrued.

CLASSIFICATION OF CAPITAL ACCORDING TO RATE OF DIVIDEND AND INTEREST.

TERRITORY COVERED.	STOCK.											
	Amount.	Percentage paying each rate.										
		Nothing paid.	1 to 2 p. c.	2 to 3 p. c.	3 to 4 p. c.	4 to 5 p. c.	5 to 6 p. c.	6 to 7 p. c.	7 to 8 p. c.	8 to 9 p. c.	9 to 10 p. c.	10 p. c. and over.
Group I	$247,236,550	21.97	1.19	3.18	0.34	8.34	3.14	11.05	11.05	20.18	1.37	18.19
" II	1,006,790,487	45.45	0.79	0.60	0.17	0.76	32.11	2.80	9.14	3.54	0.96	3.68
" III	632,993,041	52.66	1.62	0.53	7.04	9.23	8.14	9.97	7.50	1.58	0.10	1.63
" IV	210,553,501	67.40	20.79	1.70	....	1.42	4.18	2.84	1.50	0.17	....	....
" V	329,724,237	69.44	0.12	1.93	2.27	17.44	5.47	1.58	0.02	0.46	....	1.27
" VI	796,773,661	52.77	4.34	0.71	1.00	8.81	9.75	9.76	9.51	2.83	....	0.52
" VII	168,052,282	66.50	....	....	....	....	27.65	4.44	1.41	....	....	....
" VIII	506,517,347	87.72	....	4.67	0.59	5.38	0.54	1.06	0.04	....	....	....
" IX	234,487,269	99.99	....	....	....	....	....	....	....	....	....	0.01
" X	535,807,043	80.70	....	13.49	....	0.09	1.17	4.48	....	....	....	0.07
United States	$4,668,935,418	61.24	2.14	2.76	1.41	5.25	11.62	5.24	5.32	2.57	0.29	2.16

CLASSIFICATION OF CAPITAL, ETC.—*Continued.*

Territory Covered.	Funded Debt.*											
	Amount.	Percentage paying each rate.										
		Nothing paid.	1 to 2 p. c.	2 to 3 p. c.	3 to 4 p. c.	4 to 5 p. c.	5 to 6 p. c.	6 to 7 p. c.	7 to 8 p. c.	8 to 9 p. c.	9 to 10 p. c.	10 p. c. and over.
Group I	$155,320,649	1.84	2.94	0.20	7.38	20.10	27.30	26.43	13.25	. . . .	0.01	0.55
" II	1,078,235,044	19.73	1.68	0.32	3.94	22.76	22.42	15.58	13.26	0.02	0.28	0.01
" III	700,328,156	16.02	8.84	3.40	10.51	22.86	15.19	9.57	13.39	0.21	. . . .	0.01
" IV	239,543,996	20,10	0.35	4.56	2.17	44.51	15.09	9.06	2.99	1.13	0.04	. . . .
" V	424,330,568	21.06	3.04	9.61	11.32	9.61	27.50	12.13	5.58	0.10	. . . .	0.05
" VI	1,027,077,585	8.12	3.13	7.33	9.68	18.80	29.73	13.49	8.34	0.55	0.19	0.64
" VII	246,726,827	1.78	1.95	2.78	12.32	21.72	38.76	11.56	. . . .	. . . .	. . . .	9.13
" VIII	598,893,224	9.28	0.09	6.12	33.14	17.85	17.99	6.65	6.29	0.06	. . . .	2.53
" IX	282,517,347	31.66	1.61	12.02	14.59	18.32	8.80	10.87	1.79	0.01	. . . .	0.33
" X	410,017,143	10.96	. . . .	0.95	14.64	19.19	26.87	24.49	2.44	. . . .	0.37	0.09
United States	$5,162,990,539	14.39	2.72	4.57	11.82	20.69	22.99	13.31	8.26	0.21	0.13	0.91

* Exclusive of equipment trust obligations.

by higher rates of dividend and interest, although a necessary and equitable result is unfortunate for the public; the best interests of both unite in demanding its ultimate elimination so far as practicable.

The total capitalization of the railways of this country on June 30, 1893, as given by the Interstate Commerce Commission was $10,506,235,410. This includes, however, $611,610,171 of floating debt, which for the purposes of the present discussion should be deducted, leaving the actual stock and funded debt at $9,894,625,239. This amount includes considerable duplication of apparent capital, arising from the fact that railway corporations are themselves large owners of railway stock and bonds. The amounts thus held are given by the Commission as: stocks, $1,135,784,339; bonds, $427,237,894; total, $1,563,022,233, leaving outstanding $8,331,603,006 in stocks and funded debt. It should be understood that the existence of this duplication of railway capital does not in any way affect the accuracy of the statements showing income account and returns upon capital, as there are corresponding duplications in each of those statements.

The following statement shows the total capitalization of the railways in each group and the total for the United States, the amount of other or unfunded debt, the total stock and funded debt, the amounts of stocks and bonds owned by railway corporations, and the net capitalization privately owned, as given by the Statistician of the Interstate Commerce Commission for the year ending June 30, 1893.

The amounts shown in the last column of the following statement constitute the actual capitalization upon which it is contended that the business of transportation should afford a fair return. That these figures furnish a reasonably accurate measure of the true value of railway property can, it is believed, be sufficiently established, and that, too, whether it is decided that just value depends upon the cost at which present facilities could be duplicated, upon the

CAPITALIZATION.

Territory Covered.	Total Capitalization.	Other Debt.	Stock and Funded Debt.	Owned by Railways.		Net Capital not Owned by Railways.
				Stock.	Bonds.	
Group I	$431,721,329	$29,164,130	$402,557,199	$16,148,946	$4,990,237	$381,418,016
" II	2,274,461,059	168,303,397	2,106,157,662	326,498,803	91,215,375	1,688,443,484
" III	1,429,568,568	80,746,390	1,348,822,178	117,744,984	21,675,886	1,209,401,308
" IV	488,640,908	32,764,289	455,876,619	10,322,956	13,223,109	432,330,554
" V	806,914,768	47,841,327	759,073,441	33,190,774	26,023,571	699,859,096
" VI	1,919,806,507	91,027,281	1,828,779,226	180,371,574	125,759,003	1,522,648,649
" VII	441,231,104	24,627,269	416,603,835	67,465,440	36,682,151	312,456,244
" VIII	1,171,110,558	60,182,196	1,110,928,362	188,664,330	83,256,905	839,007,127
" IX	549,794,975	30,978,251	518,816,724	46,104,970	5,033,980	467,677,774
" X	992,985,634	45,975,641	947,009,993	149,271,562	19,377,677	778,360,754
United States	$10,506,235,410	$611,610,171	$9,894,625,239	$1,135,784,339	$427,237,894	$8,331,603,006

present and prospective earning capacity, or upon the price at which the properties could be purchased from their present owners. If value depends, as is frequently declared, upon cost of duplication, it should be remembered that although in certain sections roads have been constructed at extremely low cost, in other sections another extreme has been reached. Thus in New York City it is said to have cost $4,000,000 to construct four miles of line and $2,000,000 additional to build a station. In other localities there are long sections of road where grading alone has cost more than $300,000 per mile, while bridges like that across the Mississippi River at St. Louis costing $14,000,000 per mile, and tunnels like the Hoosac at $3,000,000 per mile are as essential portions of the railway system as the single track laid on a level prairie, through a semi-wilderness at a first cost of $15,000 per mile. There is certainly no reason for believing that much reduction in the cost of works such as those referred to could be made at the present time. Another item which would undoubtedly enhance the average cost per mile of duplicating our present railway facilities, would be the discounts necessary upon securities in order to secure capital for construction. This is merely a means by which capital is remunerated for the extra hazardous nature of the enterprise and a return sufficiently large to compensate for the risk encountered secured if the alternative of profitable operation is achieved. It is for this reason that stock has been frequently given as a bonus to purchasers of bonds, and where the practice is limited by the necessities of the case, it must be admitted that it is perfectly legitimate. In this view the original cost of railways, while not conclusive, throws considerable light upon their present real value. Much has been written in the effort to prove that present capitalization is largely in excess of the amounts actually expended for construction and equipment, a result which, it is alleged, has been attained through fraudulent issues of bonds and stocks, paying excessively for construction or for

acquired properties, selling bonds and stocks at a discount, and finally by declaring dividends payable in stock, all these practices being included in the general denomination "stock watering." Different writers have variously estimated the amounts of "water" in the present capitalization, some placing it as high as three-fourths of the aggregate, while others have urged that the aggregate thus improperly created is entirely offset by that eliminated by foreclosures and reorganizations. Instances of substantial reductions in capitalization resulting from these causes are numerous enough to create considerable confidence in the possibility that they may entirely balance the "water." The Cincinnati, Washington & Baltimore Railroad was reorganized after foreclosure proceedings, and became the Baltimore & Ohio Southwestern Railroad on December 20, 1889. The stock and funded debt of the new company on June 30, 1890, amounted to $35,628,116, while those of the old company, one year before, had amounted to $41,145,777. The reorganization of the Vicksburg & Meridian Railroad, which became the Alabama & Vicksburg Railway on May 1, 1889, resulted in a reduction of the total issue of stock and funded debt from $9,919,713 to $2,816,525. A reduction from $3,795,000 to $2,160,000 was also effected by the reorganization on June 24, 1891, of the Ohio & Northwestern Railroad, now known as the Cincinnati, Portsmouth & Virginia Railroad, and many similar instances could be cited. It may be that reductions like the foregoing are not the inevitable and uniform result of reorganization and foreclosure, but that they occur in a large number of instances will not be controverted. The number of foreclosures is sufficiently large to indicate the elimination of a vast amount of capital by this cause. During a period of eighteen years, from the beginning of 1876 to the close of 1893, 551 railway corporations, operating 57,283 miles of road, with stocks and bonds amounting to $3,209,126,000 were sold under foreclosure. This tremendous insolvency with its resultant sales under

the hammer of the auctioneer may easily have resulted in wiping out an amount of stocks and bonds little, if any, less than that created by stock-watering.

Railway rates then have steadily declined for a considerable period, and they do not produce an exorbitant return upon present capitalization, which is an approximately accurate measure of the just value of the railway system. The definite conclusion is therefore reached that the aggregate railway revenue is at the present time just and proper, and that under current conditions any schedule of rates covering the entire country and all classes of traffic which would not produce a revenue equal in the aggregate to that now received would be unreasonable and unjust to the owners of railway property.

But if it is conceded that railway rates as a whole are not excessive, it does not necessarily follow that those fair and equitable conditions exist which should result in perfect satisfaction upon the part of the public. It is quite as important, from the standpoint of those who purchase transportation, that the adjustment of rates shall be made without unjust discrimination against persons, places or classes of traffic as that the charges shall not be excessive. Even a low rate is of no benefit to a manufacturer if some competitor, producing at approximately equal cost, can obtain one a few cents lower, and thus dispose of goods at a profit at prices which would result in loss to one paying the higher rate. A locality seeking to become a manufacturing or distributing centre can make little headway, though granted low rates, if a competing trade centre is afforded even slight advantage in rates to common markets. Unfortunately, alike for the railways and their patrons, the methods of management arising from competitive strife for traffic have throughout the entire period of railway transportation continuously resulted in unjust discriminations of each of these classes, and it is because of the manifest injustice of methods which result in the advantage of one locality, individual or kind of traffic

at the expense of another having equal natural opportunities that the public has become so generally dissatisfied with railway rates and has sought by sometimes harsh and unwise legislation to eradicate the grosser and more apparent evils.

In solving this problem of the relative adjustment of rates between different localities and classes of traffic so that each shall contribute in exact proportion its just share of the sum necessary to carry on the business of transportation lies the true solution of the real railway problem.

In determining what aggregate revenue is reasonable and just, the cost of the transportation service as a whole, which includes wages, maintenance of facilities, and return to capital, is properly the basis of the calculation, but if we seek to make further use of this method and distribute the charges for transportation among the different articles of commerce and the various points of origin and destination according to the cost of each particular service, we are at once involved in inextricable confusion. Specific rates for particular service can never be determined by the preliminary discovery of the cost of that service, because no such distribution of the items of expenditure incident to the business of transportation in fact exists. The vast majority of these items are joint expenses, attributable not to any portion of traffic, but to all, and would continue if the carriage of any particular traffic were entirely discontinued. That this is true of fixed charges is generally recognized, but that the same principle applies with almost unabated force to operating expenses has almost entirely escaped attention. Take, for example, the simplest division possible,—that between passenger and freight traffic,—who can formulate a rule for ascertaining what proportions of the total expenses of maintaining track and roadbed should be charged to each? Nor is this all; the best authorities state that from forty to sixty per cent of operating expenses cannot be classified as arising directly from either branch of the service; and so apparent is the insurmountable nature of the difficulties attending what is

unquestionably the simplest distribution possible as well as the danger of serious and material error, if an estimate is attempted that the Interstate Commerce Commission has, after several years of discussion, decided to eliminate this feature from the annual reports required from carriers. Should more minute classification be attempted, still greater obstacles appear. If freight traffic alone is considered, it is perceived that it consists of two principal classes, through and local, each of which admits of extended subdivision, but to neither of these classes nor sub-classes can be assigned a definite portion of operating expenses. Through traffic is carried between important termini in swiftly moving trains which seldom stop except to avoid interference with passenger traffic, while local traffic is carried in slower trains making more frequent stops, yet for each of these classes it is necessary that the roadbed shall be in perfect condition, bridges in repair, switches guarded, and signals operated, and the entire discontinuance of either traffic would not very considerably diminish the necessary outlay for any of these purposes. The same obstacles to success attend every effort to distribute the cost of service down to the last detail, when we find a single car loaded with package freight of different kinds carried between different stations, all of which must contribute proportionally to the expenses of operation, beginning with the cost of handling each particular package, and including the wear upon the car itself, the wages of trainmen and track hands, maintenance of road, etc. In passenger traffic, too, if the entire cost of the traffic were determined, what mathematician would undertake the problem of deciding what proportion of expenses arose on account of the lightning express and what from the local accommodation?

Transportation in this respect is similar to the industry of mining, where silver and lead, each in sufficient quantities to be of commercial value are found together. Here it is clear that if either silver or lead were to cease to be commercially valuable, the entire expense of mining would have

to fall upon the other, and its price would be correspondingly enhanced. Also, any diminution in the demand for one or the other commodity, resulting in a lower price, would increase the price of the other, or, if higher prices could not be obtained, the business of mining would ultimately be discontinued. The prices that must be obtained for silver and lead, respectively, in order that the business of mining shall afford a reasonable profit are mutually regulative. Similarly, the revenues which must be obtained from different classes of railway traffic are interdependent, and it cannot justly be predicated of rates upon any one class or commodity or between any particular points that they are excessive or unreasonable without reference to rates upon other articles and between other points. This would be perfectly evident were it not for the multitude of items which constitute the total traffic of an ordinary railway. If a railway be conceived operating between two points only and carrying only one commodity at rates absolutely fair and reasonable, and it is supposed that a second commodity is offered for transportation, it is evident that unless the extra cost incident to the new traffic bears the same relation to the revenue derived from it that the former cost of operation bore to the former revenue, there must be either a reduction in rates upon the former commodity or a considerable increase in the profits of transportation, and, as the former return to capital was reasonable and a higher one would be excessive, the public would have a clear right to demand lower charges. So, also, the discontinuance of either traffic would involve a resultant right to higher charges for the transportation of that which remained.

Railways are entitled to a certain, easily ascertained amount of revenue which should be produced by charges for transportation, distributed among the different localities and classes of traffic with absolute fairness and impartiality, according to principles akin to those which should regulate the exercise of the taxing power. Each individual,

commodity and locality should be treated with equality, and should not be subjected to any disadvantage or prejudice, except those naturally arising from location or character of traffic. Reasonable and proper discriminations, based upon the value of the service performed, are essential and should continue, but unjust discriminations founded upon favoritism and prejudice should disappear. Charges between all points and upon all articles should be fixed at the point where, observing the reasonable limitation of total revenue, each particular rate will produce the greatest possible revenue above the absolute expense of handling. Constant endeavor to create new traffic should be made, and none should be refused which can afford to pay rates producing the smallest revenue above the cost of handling, with a reasonable allowance for the estimated depreciation of permanent way and equipment directly attributable to that traffic. Such a rule would make the carrier's revenue the sole criterion of its charges, subject to the single limitation that rates must be open to all. It would be speedily discovered that traffic is divided into two classes, according to whether its volume is limited by the rate charged. Upon many articles it would be found that lower rates produce increasing revenue, and upon such articles reductions to the point of highest net revenue would at once follow. Upon other articles, not thus affected in their movement by the rates charged, a final reduction would ensue, consequent upon the greater contribution of articles of the former class to the items of joint expense.

The ultimate result of the enlightened and consistent execution by a large number of important railways, or, better still, by a consolidated railway exclusively operating in a large territory, of a policy similar to that outlined, would certainly be rates much lower than the legislative maximums now regarded as amounting to the practical confiscation of railway properties.

Washington, D. C. H. T. NEWCOMB.